

### **REMARKS**

Upon entry of the present paper, Claims 1 to 66 will be pending for further examination. Claim 1 has been amended to include the step of “perfectly reconstructing the received signal using the set of sampled values”. Claim 28, 34, 61 and 62 have been amended in a similar manner. Basis for these amendments can be found, for example, on paragraph [0014] of the application as filed.

New Claim 63 has been added to the claim set; basis for this new claim 63 can be found in claim 1 and paragraph [0068] of the application as filed. New claims 64, 65 and 66 have also been added; basis for these new claims can be found in paragraph [0014] and claims 1, 9 and 10 of the application as filed. Thus, no new matter has been added.

Reconsideration of the present application in view of the amended claim set, the Remarks filed in response to the previously issued Office Action and the Remarks outlined herein, is respectfully requested.

#### **I. Claims Define Patentable Subject Matter**

In the Advisory Action, the Examiner acknowledges that considering Affes and Unser in a logical vacuum would lead the skilled person to sample the received signal with a sampling frequency which is equal to the innovation of the signal or, alternatively sampling the received signal with a sampling frequency which is equal to rate of innovation. The resulting method would not involve sampling “with a sampling frequency .... lower than the chip rate of said received signal, but greater than the rate of innovation of said received signal”.

The Examiner then refers to Haga et al., Pedersen et al, Pawelski, Gardenhire et al and McNeely, which teach that the sampling frequency should be optimised to achieve a compromise between distortion/interference produced by aliasing effects and processing speed and power dissipation; the sampling rate should be sufficiently high that the distortions/interferences produced by aliasing effects are small, while at the same time the sampling rate should be sufficiently low to ensure reduced processing speed and power dissipation.

Thus, in each of the methods disclosed in Haga et al., Pedersen et al, Pawelski, Gardenhire et al and McNeely, it is acknowledged there will be at least some degree of distortion in the reconstructed signal; the only requirement in each prior art method is that the degree of distortion is acceptable. Accordingly, none of the prior art document disclose the step of “perfectly reconstructing the received signal using the set of sampled values” and claims 1, 28, 34, 61, 62, 64-66 must each be considered novel.

Furthermore as pointed out in the response to the previous Office Actions, none of the cited prior art documents disclose sampling between the specific range which is lower than the chip rate of the received signal but greater than the rate of innovation of the received signal.

Advantageously, the present invention enables perfect reconstruction of a received signal using a limited bandwidth, where otherwise, as is the case in the prior art methods, an unlimited bandwidth would be required.

Since each of the cited prior art documents relate to optimizing the sampling frequency to achieve a compromise between distortion caused by aliasing and power consumption; each of the cited prior art documents inherently disclose that there is always

at least some degree of distortion in the reconstructed signal. Thus, none of the cited prior art documents disclose the step of “perfectly reconstructing the received signal using the set of sampled values”. Since none of the cited prior art documents disclose the step of “perfectly reconstructing the received signal using the set of sampled values”, a skilled person could not have arrived at the inventions of claims 1, 28, 34, 61, 62, 64-66 from the teaching of Affes, Unser, Haga et al., Pedersen et al, Pawelski, Gardenhire et al and McNeely, regardless of whether these documents are considered in isolation or in combination with one another. Thus, each of claims 1, 28, 34, 61, 62, 64-66 must be considered to involve an inventive step.

Moreover, in order to achieve perfect reconstruction of the received signals in the methods of Affes, Unser, Haga et al., Pedersen et al, Pawelski, Gardenhire et al and McNeely, an unlimited bandwidth would be required when sampling. Using an unlimited bandwidth would be completely impractical.

Referring now to claim 63, none of the cited prior art documents disclose the step of “determining the rate of innovation ( $\rho$ ) of said received signal ( $y(t)$ )”. Furthermore, as pointed out in the response to the previous Office Actions, none of the cited prior art documents disclose sampling between the specific range which is lower than the chip rate of the received signal but greater than the rate of innovation of the received signal. Thus, it is submitted that the method of claim 63 is novel.

In each of the cited prior art documents the thresholds for the sampling frequency are determined by the acceptable distortion/interference produced by the aliasing effects. None of the documents disclose determining the thresholds for the sampling frequency is in any other manner; in particular none of the cited prior art documents disclose a specific step

of “determining the rate of innovation ( $\rho$ ) of said received signal ( $y(t)$ )”, thus the skilled person could not arrive at the invention of claim 63 from the teaching of Affes, Unser, Haga et al., Pedersen et al, Pawelski, Gardenhire et al and McNeely whether considered in isolation or in combination with one another. Thus, claim 63 must be considered to involve an inventive step.

In view of the foregoing, Applicants submit that claims 1, 28, 34, 61-66 define patentable subject matter. Claims 2-33 and 35-60 depend from claims 1 and 34, respectively, and therefore, also define patentable subject matter, as well as for the additional features recited therein. Accordingly, Applicants respectfully request that the rejections be withdrawn.

## **II. Conclusion**

In light of the amendments contained herein, Applicants submit that the application is in condition for allowance, for which early action is requested. Should the Examiner is still of the opinion that the application is not in order for grant, then we would request an interview with the Examiner. In the event an interview is necessary, the Examiner is requested to contact the undersigned at the telephone number set forth below.

Please charge any fees or overpayments that may be due with this response to Deposit Account No. 17-0026.

Respectfully Submitted,

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